#49   OIPE

RAW SEQUENCE LISTING   DATE: 07/25/2001
PATENT APPLICATION: US/08/012,269A   TIME: 15:26:11

Input Set : A:\08-012269 Sequence Listing.txt
Output Set: N:\CRF3\07252001\H012269A.raw

ENTERED

```
 4 <110> APPLICANT: Kwon, Byoung S.
 6 <120> TITLE OF INVENTION: MURINE 4-1BB GENE
 8 <130> FILE REFERENCE: 740.009US1
10 <140> CURRENT APPLICATION NUMBER: US 08/012,269A
11 <141> CURRENT FILING DATE: 1993-02-01
13 <150> PRIOR APPLICATION NUMBER: US 07/922,996
14 <151> PRIOR FILING DATE: 1992-07-30
16 <150> PRIOR APPLICATION NUMBER: US 07/267,572
17 <151> PRIOR FILING DATE: 1988-11-07
19 <160> NUMBER OF SEQ ID NOS: 13
21 <170> SOFTWARE: FastSEQ for Windows Version 4.0
23 <210> SEQ ID NO: 1
24 <211> LENGTH: 2350
25 <212> TYPE: DNA
26 <213> ORGANISM: Mus musculus
28 <220> FEATURE:
29 <221> NAME/KEY: misc_feature
30 <222> LOCATION: (1)...(2350)
31 <223> OTHER INFORMATION: n = A,T,C or G
33 <400> SEQUENCE: 1
34 atgtccatga actgctgagt ggataaacag cacgggatat ctctgtctaa aggaatatta      60
35 ctacaccagg aaaaggacac attcgacaac aggaaaggag cctgtcacag aaaaccacag     120
36 tgtcctgtgc atgtgacatt tcgccatggg aaacaactgt tacaacgtgg tggtcattgt     180
37 gctgctgcta gtgggctgtg agaaggtggg agccgtgcag aactcctgtg ataactgtca     240
38 gcctggtact ttctgcagaa aatacaatcc agtctgcaag agctgccctc caagtacctt     300
39 ctccagcata ggtggacagc cgaactgtaa catctgcaga gtgtgtgcag gctatttcag     360
40 gttcaagaag ttttgctcct ctacccacaa cgcggagtgt gagtgcattg aaggattcca     420
41 ttgcttgggg ccacagtgca ccagatgtga aaaggactgc aggcctggcc aggagctaac     480
42 gaagcagggt tgcaaaacct gtagcttggg aacatttaat gaccagaacg gtactggcgt     540
43 ctgtcgaccc tggacgaact gctctctaga cggaaggtct gtgcttaaga ccgggaccac     600
44 ggagaaggac gtggtgtgtg accccctgt ggtgagcttc tctcccagta ccaccatttc     660
45 tgtgactcca gagggaggac caggagggca ctccttgcag gtccttacct tgttcctggc     720
46 gctgacatcg gctttgctgc tggccctgat cttcattact ctcctgttct ctgtgctcaa     780
47 atggatcagg aaaaaattcc cccacatatt caagcaacca tttaagaaga ccactggagc     840
48 agctcaagag gaagatgctt gtagctgccg atgtccacag gaagaagaag gaggaggagg     900
49 aggctatgag ctgtgatgta ctatcctagg agatgtgtgg gccgaaaccg agaagcacta     960
50 ggaccccacc atcctgtgga acagcacaag caaccccacc accctgttct tacacatcat    1020
51 cctagatgat gtgtgggcgc gcacctcatc caagtctctt ctaacgctaa catatttgtc    1080
52 tttacctttt ttaaatcttt ttttaaattt aaattttatg tgtgtgagtg ttttgcctgc    1140
53 ctgtatgcac acgtgtgtgt gtgtgtgtgt gtgacactcc tgatgcctga ggaggtcaga    1200
```
W--> 54 agagaaaggg ttggttccat aagaactgga gttatggatg gctgtgagcc ggnnngatag   1260
```
55 gtcgggacgg agacctgtct tcttatttta acgtgactgt ataataaaaa aaaaatgata    1320
56 tttcgggaat tgtagagatt ctcctgacac ccttctagtt aatgatctaa gaggaattgt    1380
57 tgatacgtag tatactgtat atgtgtatgt atatgtatat gtatatataa gactctttta    1440
58 ctgtcaaagt caacctagag tgtctggtta ccaggtcaat tttattggac attttacgtc    1500
59 acacacacac acacacacac acacacacgt ttatactacg tactgttatc ggtattctac    1560
60 gtcatataat gggatagggt aaaaggaaac caaagagtga gtgatattat tgtggaggtg    1620
```

```
61 acagactacc ccttctgggt acgtagggac agacctcctt cggactgtct aaaactcccc   1680
62 ttagaagtct cgtcaagttc ccggacgaag aggacagagg agacacagtc cgaaaagtta   1740
63 tttttccggc aaatcctttc cctgtttcgt gacactccac cccttgtgga cacttgagtg   1800
64 tcatccttgc gccggaaggt caggtggtac ccgtctgtag gggcggggag acagagccgc   1860
65 gggggagcta cgagaatcga ctcacagggc gccccgggct tcgcaaatga aactttttta   1920
66 atctcacaag tttcgtccgg gctcggcgga cctatggcgt cgatccttat taccttatcc   1980
67 tggcgccaag ataaaacaac caaaagcctt gactccggta ctaattctcc ctgccggccc   2040
68 ccgtaagcat aacgcggcga tctccacttt aagaacctgg ccgcgttctg cctggtctcg   2100
69 ctttcgtaaa cggttcttac aaaagtaatt agttcttgct ttcagcctcc aagcttctgc   2160
70 tagtctatgg cagcatcaag gctggtattt gctacggctg accgctacgc cgccgcaata   2220
71 agggtactgg gcggcccgtc gaaggccctt tggtttcaga aacccaaggc ccccctcata   2280
72 ccaacgtttc gactttgatt cttgccggta cgtggtggtg ggtgccttag ctctttctcg   2340
73 atagttagac                                                          2350
75 <210> SEQ ID NO: 2
76 <211> LENGTH: 256
77 <212> TYPE: PRT
78 <213> ORGANISM: Mus musculus
80 <400> SEQUENCE: 2
81 Met Gly Asn Asn Cys Tyr Asn Val Val Val Ile Val Leu Leu Leu Val
82  1               5                  10                  15
83 Gly Cys Glu Lys Val Gly Ala Val Gln Asn Ser Cys Asp Asn Cys Gln
84             20                  25                  30
85 Pro Gly Thr Phe Cys Arg Lys Tyr Asn Pro Val Cys Lys Ser Cys Pro
86         35                  40                  45
87 Pro Ser Thr Phe Ser Ser Ile Gly Gly Gln Pro Asn Cys Asn Ile Cys
88     50                  55                  60
89 Arg Val Cys Ala Gly Tyr Phe Arg Phe Lys Lys Phe Cys Ser Ser Thr
90 65                  70                  75                  80
91 His Asn Ala Glu Cys Glu Cys Ile Glu Gly Phe His Cys Leu Gly Pro
92                 85                  90                  95
93 Gln Cys Thr Arg Cys Glu Lys Asp Cys Arg Pro Gly Gln Glu Leu Thr
94             100                 105                 110
95 Lys Gln Gly Cys Lys Thr Cys Ser Leu Gly Thr Phe Asn Asp Gln Asn
96             115                 120                 125
97 Gly Thr Gly Val Cys Arg Pro Trp Thr Asn Cys Ser Leu Asp Gly Arg
98      130                 135                 140
99 Ser Val Leu Lys Thr Gly Thr Thr Glu Lys Asp Val Val Cys Gly Pro
100 145                 150                 155                 160
101 Pro Val Val Ser Phe Ser Pro Ser Thr Thr Ile Ser Val Thr Pro Glu
102                 165                 170                 175
103 Gly Gly Pro Gly Gly His Ser Leu Gln Val Leu Thr Leu Phe Leu Ala
104                 180                 185                 190
105 Leu Thr Ser Ala Leu Leu Leu Ala Leu Ile Phe Ile Thr Leu Leu Phe
106             195                 200                 205
107 Ser Val Leu Lys Trp Ile Arg Lys Lys Phe Pro His Ile Phe Lys Gln
108     210                 215                 220
109 Pro Phe Lys Lys Thr Thr Gly Ala Ala Gln Glu Glu Asp Ala Cys Ser
110 225                 230                 235                 240
111 Cys Arg Cys Pro Gln Glu Glu Glu Gly Gly Gly Gly Gly Tyr Glu Leu
```

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```
112                    245              250              255
114 <210> SEQ ID NO: 3
115 <211> LENGTH: 24
116 <212> TYPE: PRT
117 <213> ORGANISM: Mus musculus
119 <400> SEQUENCE: 3
120 Cys Arg Val Cys Ala Gly Tyr Phe Arg Phe Lys Lys Phe Cys Ser Ser
121  1               5                  10                  15
122 Thr His Asn Ala Glu Cys Glu Cys
123             20
125 <210> SEQ ID NO: 4
126 <211> LENGTH: 22
127 <212> TYPE: PRT
128 <213> ORGANISM: Drosophila
130 <400> SEQUENCE: 4
131 Cys Pro Val Cys Phe Asp Tyr Val Ile Leu Gln Cys Ser Ser Gly His
132  1               5                  10                  15
133 Leu Val Cys Val Ser Cys
134             20
136 <210> SEQ ID NO: 5
137 <211> LENGTH: 26
138 <212> TYPE: PRT
139 <213> ORGANISM: Dictyostelium
141 <400> SEQUENCE: 5
142 Cys Pro Ile Cys Phe Glu Phe Ile Tyr Lys Lys Gln Ile Tyr Gln Cys
143  1               5                  10                  15
144 Lys Ser Gly His His Ala Cys Lys Glu Cys
145             20                  25
147 <210> SEQ ID NO: 6
148 <211> LENGTH: 6
149 <212> TYPE: PRT
150 <213> ORGANISM: Mus musculus
152 <220> FEATURE:
153 <221> NAME/KEY: SITE
154 <222> LOCATION: (1)...(6)
155 <223> OTHER INFORMATION: Xaa = Any Amino Acid
157 <400> SEQUENCE: 6
```

W--> **158 Val Gln Asn Ser Xaa Asp**

```
159  1               5
161 <210> SEQ ID NO: 7
162 <211> LENGTH: 12
163 <212> TYPE: PRT
164 <213> ORGANISM: Artificial Sequence
166 <220> FEATURE:
167 <223> OTHER INFORMATION: An artificial peptide
169 <400> SEQUENCE: 7
170 Cys Arg Pro Gly Gln Glu Leu Thr Lys Ser Gly Tyr
171  1               5                  10
173 <210> SEQ ID NO: 8
```

RAW SEQUENCE LISTING   DATE: 07/25/2001
PATENT APPLICATION: US/08/012,269A   TIME: 15:26:11

Input Set : A:\08-012269 Sequence Listing.txt
Output Set: N:\CRF3\07252001\H012269A.raw

```
     174 <211> LENGTH: 24
     175 <212> TYPE: PRT
     176 <213> ORGANISM: Artificial Sequence
     178 <220> FEATURE:
     179 <223> OTHER INFORMATION: A conserved pattern
     181 <221> NAME/KEY: SITE
     182 <222> LOCATION: (1)...(24)
     183 <223> OTHER INFORMATION: Xaa = Any Amino Acid
     185 <400> SEQUENCE: 8
W--> 186 Cys Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa
     187 1               5                   10                  15
W--> 188 Xaa His Xaa Xaa Xaa Cys Xaa Cys
     189             20
     191 <210> SEQ ID NO: 9
     192 <211> LENGTH: 4
     193 <212> TYPE: PRT
     194 <213> ORGANISM: Mus musculus
     196 <400> SEQUENCE: 9
     197 Cys Arg Cys Pro
     198 1
     200 <210> SEQ ID NO: 10
     201 <211> LENGTH: 4
     202 <212> TYPE: PRT
     203 <213> ORGANISM: Artificial Sequence
     205 <220> FEATURE:
     206 <223> OTHER INFORMATION: A consensus sequence
     208 <221> NAME/KEY: SITE
     209 <222> LOCATION: (1)...(4)
     210 <223> OTHER INFORMATION: Xaa = Any Amino Acid
     212 <400> SEQUENCE: 10
W--> 213 Cys Xaa Cys Pro
     214 1
     216 <210> SEQ ID NO: 11
     217 <211> LENGTH: 25
     218 <212> TYPE: DNA
     219 <213> ORGANISM: Artificial Sequence
     221 <220> FEATURE:
     222 <223> OTHER INFORMATION: A primer
     224 <400> SEQUENCE: 11
     225 acctcgaggt cctgtgcatg tgaca                                    25
     227 <210> SEQ ID NO: 12
     228 <211> LENGTH: 25
     229 <212> TYPE: DNA
     230 <213> ORGANISM: Artificial Sequence
     232 <220> FEATURE:
     233 <223> OTHER INFORMATION: A primer
     235 <400> SEQUENCE: 12
     236 atgaattctt actgcaggag tgccc                                    25
     238 <210> SEQ ID NO: 13
```

```
239 <211> LENGTH: 11
240 <212> TYPE: PRT
241 <213> ORGANISM: Mus musculus
243 <400> SEQUENCE: 13
244 Cys Arg Pro Gly Gln Glu Leu Thr Lys Gln Gly
245 1               5                   10
```

VERIFICATION SUMMARY   DATE: 07/25/2001
PATENT APPLICATION: **US/08/012,269A**   TIME: 15:26:12

Input Set : **A:\08-012269 Sequence Listing.txt**
Output Set: **N:\CRF3\07252001\H012269A.raw**

```
L:54 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:158 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:186 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8
L:188 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8
L:213 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10
```